

erect, black hairs tipped with brown, almost an inch or rather more in length; but in this individual the hairs are nearly 5 inches long (P. Z. S. 1872, p. 130), so that the character from which it has been named may be only an individual peculiarity.

The species from Malacca has the hair on the body "thick, black, which stands erect like the hog-mane of a horse;" and further on, Mr. Buckland says the hair is stiff like "hedgehog's bristles."

The skin is "very rough, the tail long and thin, and comes nearly to the hocks."

Hairy Rhinoceros from Malacca, Buckland, 'Land and Water,' Aug. 10, 1872.

Rhinoceros sumatrensis, Sclater, *vide* Buckland, 'Land and Water,' Aug. 10, 1872.

Rhinoceros sumatranus from Tavoy, Blyth, Journ. Asiat. Soc. Bengal, 1862, t. 4. f. 1 & 2 (skull).

Rhinoceros sumatranus from Tenasserim, Blyth, Journ. Asiat. Soc. Bengal, 1862, p. 156, t. 3. f. 1, 2, 3, & v. 4. f. 2 & 3.

Rhinoceros Crossii, Gray, P. Z. S. 1854, p. 250, fig. (horns).

Hab. Malacca (*Zool. Gard.*); Tavoy, northern frontier of Siam; Pegu (*Theobald, B. M.*).

I think, from Blyth's figure of the skull from Tavoy, that the name of *Ceratorhinus Crossii* should be attributed to this species.

It is clearly not the Sumatran *Ceratorhinus* figured and described by Bell, Müller, and other zoologists, who would not have overlooked the hedgehog-like bristles and long slender tail.

XXXI.—*Note on Tethya muricata, Bowerbank, and Dorvillia agariciformis, Kent.* By W. SAVILLE KENT, F.Z.S., F.R.M.S., Geological Department, British Museum.

IN Part I. of the 'Proceedings of the Zoological Society' for this year, just issued, Dr. Bowerbank comments upon a sponge described and figured by myself in the 'Transactions of the Royal Microscopical Society' for 1870, under the name of *Dorvillia agariciformis*, referring it to his hitherto manuscript species *Tethya muricata*. The singular mushroom-like form which suggested the specific title attached to this sponge in my description, Dr. Bowerbank thinks fit to regard as an abnormal and imperfect condition, and summarily disposes of it as a "mutilated specimen" of his own species, having "the upper portion evidently torn away from its basal one, causing

the part described to assume a form very much like that of an Agaric." Referring next to the types of spicula figured in my plate, Dr. Bowerbank assumes that I have "fallen into the error of describing some of those organs (?) that do not belong to the species under consideration," and enumerates in consecutive order such ones as he condemns as being derived from extraneous sources.

Dr. Bowerbank's foregoing adverse criticisms being rather calculated to mislead those interested in the structure of the Spongiadæ, I feel it incumbent upon myself to reply briefly to them.

In the first place I must express the most unqualified dissent from Dr. Bowerbank's proposition that the specimen from which my description was derived is a "mutilated" one: another example, accompanying the individual figured, furnished the same characters; and the same may be said of a fine series obtained by Dr. Carpenter and Professor Wyville Thomson during their earlier dredging expeditions to the North Atlantic in H.M.S. 'Porcupine.' The last-named gentleman, singularly enough, independently adopted the same specific title of *agariciformis* for this remarkable sponge, in reference to its striking contour, while at the same time he further generically distinguished it by the title of *Tisiphonia*.

Had Dr. Bowerbank referred to his last year's volume of the 'Annals,' he would have discovered that in the January number I contribute additional remarks on this same sponge, discarding those spicula of the hexaradiate type objected to by himself as having been derived from contact with other species, and correlate it with the true Tethyadæ. The question now remains whether the form is identical with Dr. Bowerbank's *Tethya muricata*, or whether it must rank as distinct a species. In the former case Dr. Bowerbank's specific title will have to be expunged, as, until this last issue of the Zoological Society's 'Proceedings,' no recognizable diagnosis of *Tethya muricata* has been published. One or two of the spicula have been figured by its author in his "Physiology of the Spongiadæ" in the 'Philosophical Transactions' for 1858 and 1862, and in his 'Monograph of the British Spongiadæ,' published by the Ray Society, these being in both places referred to *Tethya muricata* of his own MS.; so vague a reference, however, is totally inadequate for the purpose of establishing it as a species. On the other hand, the evidence in favour of its being a well-established deep-sea form, closely allied to, but possessing constant characters of specific value distinct from Dr. Bowerbank's *T. muricata* is of the most satisfactory description. Both Professor Wyville Thomson's specimens and my own

show in common the characteristic *agaricine* contour, and vary from all hitherto described *Tethyadæ* in the possession of the dependent fascicles of long anchoring spicula by means of which it rests secure on the treacherous surface of the yielding ooze which constitutes its habitat. Dr. Bowerbank has thought fit to assume that these dependent fascicles are "skeleton-fasciculi of the sponge drawn out of the basal portion" at the time of his supposed mutilation, an error of judgment only explicable by his over-anxiety to identify the species with his own. On equally slender grounds, because he cannot find them in his own example, he considers himself justified in condemning as "extraneous" in mine certain very characteristic three- and four-rayed tension-spicula of the sarcode, figured and alluded to in my description (M. M. J. 1870, pl. lxvi. figs. 16-18 and p. 294). Since perusing his comments I have reexamined carefully mounted sections of the sponge, and am perfectly satisfied as to the correctness of referring these spicula to the position already indicated, which again constitutes valuable evidence in support of its being a species perfectly distinct from Dr. Bowerbank's. It is also most satisfactory to remark that Prof. Wyville Thomson has detected these same types of spicula in his specimens and figured them in his unpublished plates, which have again been reproduced in Dr. Oscar Schmidt's 'Spongienfauna des atlantischen Gebietes,' where they may be readily recognized at pl. vi. fig. 12. The anchoring filaments in Prof. Thomson's specimens exceed mine in length and abundance.

The nomenclature of this sponge, which has proved itself a very "apple of discord" among spongologists of the day, will now admit of definite solution. Allowing, with Oscar Schmidt, that the character of the dependent anchoring filaments, in which it differs from all *Tethyæ* hitherto described, constitutes a modification and adaptation to its natural habitat, scarcely justifying its being promoted to the rank of a distinct genus, the generic title of *Tethya* is still retained, with the specific one of *agariciformis* already bestowed upon it by Professor Wyville Thomson and myself, the following being offered as a brief summary of its technical characters already more comprehensively treated of in the two journals here quoted.

Tethya agariciformis, Kent.

Dorvillia agariciformis, Kent, Monthly Microscopical Journal, December 1870, p. 293, pl. lxvi. (excepting figs. 10-12, 14, 15, & 19); Ann. & Mag. Nat. Hist. Jan. 1871, vol. vii. ser. 4. p. 37.

Tisiphonia agariciformis, Wyville Thomson, MS. Porcupine Exp. 1870.

Stellata agariciformis, Oscar Schmidt, Spongienfauna des atlantischen Gebietes, p. 68, pl. vi. fig. 12, 1870.

Wyvillethomsonia Wallichii (?), Perceval Wright, Quarterly Journal of Microscopical Science, p. 8, pl. ii. 1870*.

Not *Tethya muricata*, Bowerbank, Proc. Zool. Soc. p. 117, 1872.

Sponge subconical, agariciform, having an expanded upper portion or hood, at or around the summit of which are located the exhalent apertures or oscula, and a lower or basal portion bearing numerous fasciculi of attenuate acerate and anchorate spicula, the two regions being distinctly marked off from one another by the overlapping of the hood. Spicula of the skeleton large, fusiformi-acerate, expando-ternate, recurvato-ternate, and bifurcate expando-ternate; spicula of the sarcode abundant, minute attenuato-stellate, with occasional larger triradiate and quadriradiate types.

Hab. Atlantic, dredged at a depth of 500 fathoms and upwards.

XXXII.—*Description of Hesperornis regalis, with notices of four other new Species of Cretaceous Birds.* By Professor O. C. MARSH †.

THE few remains of birds hitherto described from the Cretaceous deposits of this country, although of much interest, all pertained to comparatively small species, and belonged, apparently, to families still existing †. It is fortunate, therefore, that the existence of a fossil bird so large and remarkable as the one that forms the subject of the present description should first be made known by the discovery of such important parts of a skeleton as to afford ample material for the determination of its affinities. This interesting discovery has already been announced in this Journal, and the name *Hesperornis regalis* proposed by the writer for the species thus represented §. The present paper is preliminary to a full description, with illustrations, now in course of preparation. The other species briefly described in this article are likewise of interest, as they add some new forms to the limited avian fauna heretofore found in the Cretaceous beds of the Atlantic coast.

Hesperornis regalis, gen. et sp. nov.

The remains of this species at present known consist of portions of one skeleton, including the nearly entire posterior limbs, from the femur to the terminal phalanges, parts of the

* Possibly the embryonic condition of *Tethya agariciformis*.

† From the 'American Journal of Science and Arts,' n. s. vol. iii. May, 1872.

‡ *Ibid.* vol. xlix. p. 205, March 1870.

§ *Ibid.* n. s. vol. iii. p. 56, January 1872; Ann. & Mag. Nat. Hist. April 1872, p. 326.